

BENGKEL MAT112 NOV2019

SESI II

COMPOUND INTEREST

1. Lee Goo wants to accumulate RM5,000 in 3 years time. If a bank charges 5.4% compounded quarterly, what is the amount he needs to save now?
2. Chua Hin deposited RM10,000 into an account that paid interest rate of 6% compounded quarterly. He intended to keep the account untouched for 5 years. However, after 3 years he had to withdraw 40% from the account. Find the amount in the account 2 years after the withdrawal.
3. Sara was deposited RM P in a saving account with interest 3.5% compounded semi-annually. After 3 years, RM5,000 was withdrawn. 2 years after the withdrawal, the balance in the account was RM12,500. Find the value of RM P .
4. An investment scheme is offering to double your money. They say if you invest with them at 5% interest compounded quarterly, they will double your money. If you invest RM2,300, how long will it take to double your money.
5. Aaliyah saved RM Y in a bank that offers an interest rate of 7% compounded every 4 months. If the accumulated amount at the end of 6 years is RM4225, find (i) the amount of Y ; (ii) the interest earned.

ANNUITY

1. A deposit of RM 25,000 has been made to buy an apartment. If the monthly payment is RM1,100 for 20 years and interest charged is 4.4% compounded monthly, find (a) the cash price of the apartment and (b) the total interest charged.
2. A land was bought for a deposit of RM15,000 and the balance of RM35,000 was financed through bank which charged 10% interest compounded monthly. If payments are paid monthly for 9 years,
 - (i) how much is the monthly payment?
 - (ii) What is the total payment for the land?
3. M-Bank offers a personal loan of RM45,000 and the customer is given 5 years to settle the loan at 7% compounded monthly.
 - (i) Find the monthly payment
 - (ii) If the customer fails to pay the first four payments, how much should he pays on the fifth payment in order to keep his payments up to date?
 - (iii) Immediately after 50th payment, the customer plans to settle all his debts in one single payment. How much is the payment?
4. A high-speed motorbike was bought at RM 80,000. 10% down payment need to be made and the balance was financed by bank at an interest rate of 2.2% compounded monthly. The loan is to be repaid over 7 years.
 - (i) Find the monthly payment for the loan.
 - (ii) Find the total interest charged.
 - (iii) If the first three monthly payments fail to pay, find the amount to be paid on the 4th payment to keep the payment up to date.
 - (iv) Find the outstanding balance if the loan is settled immediately after the 80th payment.

5. Mariana borrowed RM100,000 at 4% compounded monthly. She must repay the loan by making 60 monthly payments.
 - (i) Find her monthly payment.
 - (ii) If she has not paid her first 15 monthly payments, how much should she pay on her 16th payment to settle all outstanding arrears?

COMPOUND INTEREST + ANNUITY

1. When Manisah was 22 years old, she deposited RM200 at the end of every month in an account that pays 6% compounded monthly. Ten years later, she decides to withdraw RM2,000. Then, she leaves the account untouched until she reaches 40 years old. Calculate the total amount of money in the account when she is 40 and the total interest earned for this investment.
2. RM200 was saved every month for four years in an account that pays 6% compounded monthly. Find the accumulated value if the interest rate was changed to 8% compounded monthly after one year.
3. RM150 is invested at the end of every month for 40 months in an account that pays 5% interest compounded monthly. After 40 months, no more payments are made. Find the amount in the account at the end of 50 months.
4. Jin Ho saved RM500 every three months for four years in L-Bank that paid 4% compounded quarterly. The account was left until the end of the sixth year where she withdrew half of the amount and invested in K-Bank at 10% compounded monthly. Both the accounts were left untouched for another four years.
 - (i) Find the amount of the account in L-Bank at the end of 10 years.
 - (ii) Find the amount of the account in K-Bank at the end of 4 years.
5. Arissa saved RM1,000 into an account that charged 5% interest compounded semi-annually for 3 years. After 3 years, she decides to save RM500 every 6 months into the same account for next 5 years.
 - (i) Find the accumulated amount in her account after 3 years.
 - (ii) Find the accumulated amount in her account at the end of 8 years.